

RECEIVED #5

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1646

TECH CENTER 1600/2900

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/09/454,651A

DATE: 07/28/2000  
 TIME: 13:35:00

Input Set : A:\SEQLIST.txt  
 Output Set: N:\CRF3\07282000\I454651A.raw

ENTERED

## SEQUENCE LISTING

C--> 5 (1) GENERAL INFORMATION:  
 7 (i) APPLICANT: Linsley, Peter S.  
 8 Ledbetter, Jeffrey A.  
 9 Damle, Nitin K.  
 10 Brady, William  
 11 Wallace, Philip M.  
 C--> 13 (ii) TITLE OF INVENTION: CTLA4/CD28Ig HYBRID FUSION  
 14 PROTEINS AND USES THEREOF  
 16 (iii) NUMBER OF SEQUENCES: 22  
 18 (iv) CORRESPONDENCE ADDRESS:  
 19 (A) ADDRESSEE: Mandel & Adriano  
 20 (B) STREET: 35 N. Arroyo Parkway, Suite 60  
 21 (C) CITY: Pasadena  
 22 (D) STATE: California  
 23 (E) COUNTRY: USA  
 24 (F) ZIP: 91103  
 26 (v) COMPUTER READABLE FORM:  
 27 (A) MEDIUM TYPE: Diskette  
 28 (B) COMPUTER: IBM Compatible  
 29 (C) OPERATING SYSTEM: DOS  
 30 (D) SOFTWARE: FastSEQ Version 2.0  
 32 (vi) CURRENT APPLICATION DATA:  
 C--> 33 (A) APPLICATION NUMBER: US/09/454,651A  
 C--> 34 (B) FILING DATE: 06-Dec-1999  
 35 (C) CLASSIFICATION:  
 37 (vii) PRIOR APPLICATION DATA:  
 38 (A) APPLICATION NUMBER: 08/228,208  
 39 (B) FILING DATE: 15-APR-1994  
 41 (A) APPLICATION NUMBER: 08/008,898  
 42 (B) FILING DATE: 22-JAN-1993  
 44 (A) APPLICATION NUMBER: 07/723,617  
 45 (B) FILING DATE: 27-JUL-1991  
 48 (viii) ATTORNEY/AGENT INFORMATION:  
 49 (A) NAME: Adriano, Sarah B  
 50 (B) REGISTRATION NUMBER: 34,470  
 51 (C) REFERENCE/DOCKET NUMBER: 30436-30US01  
 53 (ix) TELECOMMUNICATION INFORMATION:  
 54 (A) TELEPHONE: 310 445-1140  
 55 (B) TELEFAX: 310 445-9031  
 56 (C) TELEX:  
 59 (2) INFORMATION FOR SEQ ID NO: 1:  
 60 (i) SEQUENCE CHARACTERISTICS:  
 61 (A) LENGTH: 39 base pairs  
 62 (B) TYPE: nucleic acid  
 63 (C) STRANDEDNESS: single  
 64 (D) TOPOLOGY: linear

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65      (ii) MOLECULE TYPE: DNA (genomic)
66      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
68 CTAGCCACTG AAGCTTCACC ATGGGTGTAC TGCTCACAC
71 (2) INFORMATION FOR SEQ ID NO: 2:
72      (i) SEQUENCE CHARACTERISTICS:
73          (A) LENGTH: 39 base pairs
74          (B) TYPE: nucleic acid
75          (C) STRANDEDNESS: single
76          (D) TOPOLOGY: linear
77      (ii) MOLECULE TYPE: DNA (genomic)
78      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
80 TGGCATGGGC TCCTGATCAG GCTTAGAAGG TCCGGGAAA
83 (2) INFORMATION FOR SEQ ID NO: 3:
84      (i) SEQUENCE CHARACTERISTICS:
85          (A) LENGTH: 39 base pairs
86          (B) TYPE: nucleic acid
87          (C) STRANDEDNESS: single
88          (D) TOPOLOGY: linear
89      (ii) MOLECULE TYPE: DNA (genomic)
90      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
92 TTTGGGCTCC TGATCAGGAA AATGCTCTTG CTGGTTGT
95 (2) INFORMATION FOR SEQ ID NO: 4:
96      (i) SEQUENCE CHARACTERISTICS:
97          (A) LENGTH: 84 base pairs
98          (B) TYPE: nucleic acid
99          (C) STRANDEDNESS: single
100         (D) TOPOLOGY: linear
101      (ii) MOLECULE TYPE: DNA (genomic)
102      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
104 AAGCAAGAGC ATTTTCCTGA TCAGGAGCCC AAATCTTCTG ACAAACCTCA CACATCCCCA
106 CCGTCCCCAG CACCTGAACT CCTG
109 (2) INFORMATION FOR SEQ ID NO: 5:
110      (i) SEQUENCE CHARACTERISTICS:
111          (A) LENGTH: 41 base pairs
112          (B) TYPE: nucleic acid
113          (C) STRANDEDNESS: single
114          (D) TOPOLOGY: linear
115      (ii) MOLECULE TYPE: DNA (genomic)
116      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
118 CTTGACCAG TCTAGAAGCA TCCTCGTGCG ACCGCGAGAG C
121 (2) INFORMATION FOR SEQ ID NO: 6:
122      (i) SEQUENCE CHARACTERISTICS:
123          (A) LENGTH: 47 base pairs
124          (B) TYPE: nucleic acid
125          (C) STRANDEDNESS: single
126          (D) TOPOLOGY: linear
127      (ii) MOLECULE TYPE: DNA (genomic)
128      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
130 CATTGCACAG TCAAGCTTCC ATGCCCATGG GTTCTCTGGC CACCTTG

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JUN 08 2000

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133 (2) INFORMATION FOR SEQ ID NO: 7:
134   (i) SEQUENCE CHARACTERISTICS:
135       (A) LENGTH: 39 base pairs
136       (B) TYPE: nucleic acid
137       (C) STRANDEDNESS: single
138       (D) TOPOLOGY: linear
139   (ii) MOLECULE TYPE: DNA (genomic)
140   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
142 ATCCACAGTG CAGTGATCAT TTGGATCCTG GCATGTGAC      39
145 (2) INFORMATION FOR SEQ ID NO: 8:
146   (i) SEQUENCE CHARACTERISTICS:
147       (A) LENGTH: 65 base pairs
148       (B) TYPE: nucleic acid
149       (C) STRANDEDNESS: single
150       (D) TOPOLOGY: linear
151   (ii) MOLECULE TYPE: DNA (genomic)
152   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
154 CTCAGTCTGG TCCTTGCACT CCTGTTCCA AGCATGGCGA GCATGGCAAT GCACGTGGCC      60
156 CAGCC      65
159 (2) INFORMATION FOR SEQ ID NO: 9:
160   (i) SEQUENCE CHARACTERISTICS:
161       (A) LENGTH: 33 base pairs
162       (B) TYPE: nucleic acid
163       (C) STRANDEDNESS: single
164       (D) TOPOLOGY: linear
165   (ii) MOLECULE TYPE: DNA (genomic)
166   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
168 TTTGGGCTCC TGATCAGAAT CTGGGCACGG TTG      33
171 (2) INFORMATION FOR SEQ ID NO: 10:
172   (i) SEQUENCE CHARACTERISTICS:
173       (A) LENGTH: 72 base pairs
174       (B) TYPE: nucleic acid
175       (C) STRANDEDNESS: single
176       (D) TOPOLOGY: linear
177   (ii) MOLECULE TYPE: DNA (genomic)
178   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
180 CTAGCCACTG AAGCTTCACC AATGGGTGTA CTGCTCACAC AGAGGACGCT GCTCAGTCTG      60
182 GTCCTTGCAC TC      72
185 (2) INFORMATION FOR SEQ ID NO: 11:
186   (i) SEQUENCE CHARACTERISTICS:
187       (A) LENGTH: 33 base pairs
188       (B) TYPE: nucleic acid
189       (C) STRANDEDNESS: single
190       (D) TOPOLOGY: linear
191   (ii) MOLECULE TYPE: DNA (genomic)
192   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
194 GCAATGCACG TGGCCCAGCC TGCTGTGTA GTG      33
197 (2) INFORMATION FOR SEQ ID NO: 12:
198   (i) SEQUENCE CHARACTERISTICS:

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Input Set : A:\SEQLIST.txt  
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199      (A) LENGTH: 45 base pairs
200      (B) TYPE: nucleic acid
201      (C) STRANDEDNESS: single
202      (D) TOPOLOGY: linear
203      (ii) MOLECULE TYPE: DNA (genomic)
204      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
206 TGATGTAACA TGTCTAGATC AATTGATGGG AATAAAATAA GGCTG
209 (2) INFORMATION FOR SEQ ID NO: 13:
210      (i) SEQUENCE CHARACTERISTICS:
211          (A) LENGTH: 561 nucleotides
212          (B) TYPE: nucleic acid
213          (C) STRANDEDNESS: single
214          (D) TOPOLOGY: linear
215      (ii) MOLECULE TYPE: DNA (genomic)
216      (ix) FEATURE:
217          (A) NAME/KEY: CDS
218          (B) LOCATION: 1..561
220      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
222 GCA ATG CAC GTG GCC CAG CCT GCT GTG GTA CTG GCC AGC AGC CGA GGC
223 Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala Ser Ser Arg Gly
224 1 5 10 15
226 ATC GCC AGC TTT GTG TGT GAG TAT GCA TCT CCA GGC AAA GCC ACT GAG
227 Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly Lys Ala Thr Glu
228 20 25 30
230 GTC CGG GTG ACA GTG CTT CGG CAG GCT GAC AGC CAG GTG ACT GAA GTC
231 Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val
232 35 40 45
234 TGT GCG GCA ACC TAC ATG ATG GGG AAT GAG TTG ACC TTC CTA GAT GAT
235 Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp
236 50 55 60
238 TCC ATC TGC ACG GGC ACC TCC AGT GGA AAT CAA GTG AAC CTC ACT ATC
239 Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile
240 65 70 75 80
242 CAA GGA CTG AGG GCC ATG GAC ACG GGA CTC TAC ATC TGC AAG GTG GAG
243 Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu
244 85 90 95
246 CTC ATG TAC CCA CCG CCA TAC TAC CTG GGC ATA GGC AAC GGA ACC CAG
247 Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln
248 100 105 110
250 ATT TAT GTA ATT GAT CCA GAA CCG TGC CCA GAT TCT GAC TTC CTC CTC
251 Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser Asp Phe Leu Leu
252 115 120 125
254 TGG ATC CTT GCA GCA GTT AGT TCG GGG TTG TTT TTT TAT AGC TTT CTC
255 Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe Tyr Ser Phe Leu
256 130 135 140
258 CTC ACA GCT GTT TCT TTG AGC AAA ATG CTA AAG AAA AGA AGC CCT CTT
259 Leu Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys Arg Ser Pro Leu
260 145 150 155 160
262 ACA ACA GGG GTC TAT GTG AAA ATG CCC CCA ACA GAG CCA GAA TGT GAA

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263 Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu Pro Glu Cys Glu  
 264 165 170 175 561  
 266 AAG CAA TTT CAG CCT TAT TTT ATT CCC ATC AAT  
 267 Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn  
 268 180 185  
 271 (2) INFORMATION FOR SEQ ID NO: 14:  
 272 (i) SEQUENCE CHARACTERISTICS:  
 273 (A) LENGTH: 187 amino acids  
 274 (B) TYPE: amino acid  
 275 (D) TOPOLOGY: linear  
 276 (ii) MOLECULE TYPE: protein  
 277 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:  
 279 Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala Ser Ser Arg Gly  
 280 1 5 10 15  
 282 Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly Lys Ala Thr Glu  
 283 20 25 30  
 285 Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val  
 286 35 40 45  
 288 Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr phe Leu Asp Asp  
 289 50 55 60  
 291 Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile  
 292 65 70 75 80  
 294 Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu  
 295 85 90 95  
 297 Leu Met Tyr Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln  
 298 100 105 110  
 300 Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser Asp Phe Leu Leu  
 301 115 120 125  
 303 Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe Tyr Ser Phe Leu  
 304 130 135 140  
 306 Leu Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys Arg Ser Pro Leu  
 307 145 150 155 160  
 309 Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu Pro Glu Cys Glu  
 310 165 170 175  
 312 Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn  
 313 180 185  
 316 (2) INFORMATION FOR SEQ ID NO: 15:  
 317 (i) SEQUENCE CHARACTERISTICS:  
 318 (A) LENGTH: 18 base pairs  
 319 (B) TYPE: nucleic acid  
 320 (C) STRANDEDNESS: single  
 321 (D) TOPOLOGY: linear  
 322 (ii) MOLECULE TYPE: DNA (genomic)  
 323 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15: 18  
 325 AATACGACTC ACTATAGG  
 328 (2) INFORMATION FOR SEQ ID NO: 16:  
 329 (i) SEQUENCE CHARACTERISTICS:  
 330 (A) LENGTH: 18 base pairs  
 331 (B) TYPE: nucleic acid

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/454,651A

DATE: 07/28/2000  
TIME: 13:35:01

Input Set : A:\SEQLIST.txt

Output Set: N:\CRF3\07282000\I454651A.raw

L:5 M:220 C: Keyword misspelled or invalid format, [(1) GENERAL INFORMATION:]  
L:13 M:220 C: Keyword misspelled or invalid format, [(ii) TITLE OF INVENTION:]  
L:33 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]  
L:34 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]